

Application No. 10/766,939
Reply to Office Action dated October 18, 2005

Attorney Docket No. FS-F03228-01

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently Amended) An image forming method comprising:

image-wise exposing to a radiation source a photothermographic material comprising, on a same surface of a support, a photosensitive silver halide having a silver iodide content of 40 to 100 mol%, a non-photosensitive organic silver salt, a reducing agent, a binder, and an adsorbable redox compound represented by Formula (I), wherein, in Formula (I), A represents a group that can be adsorbed by silver halide; W represents a divalent connecting group; n represents 0 or 1; B represents a reducing group that is capable of reducing silver ions and is a residue derived from a compound represented by any one of Formulas B₁ to B₅ and Formula B₁₃; and

thermally developing the image-wise exposed photothermographic material with a developing time of 1 to 12 seconds;

~~wherein in Formulas (B₁) to (B₁₃)~~ wherein in Formulas B₁ to B₅ and in Formula B₁₃, R_{b1}, R_{b2}, R_{b3}, R_{b4}, R_{b5}, ~~R_{b70}, R_{b71}, R_{b110}, R_{b111}, R_{b112}, R_{b113}, R_{b12}, R_{b13}, R_{N1}, R_{N2}, R_{N3}, R_{N4} and R_{N5}~~ each independently represent a hydrogen atom, an alkyl group, an aryl group or a heterocyclic group; R_{H3}, R_{H5}, R'_{H5}, ~~R_{H12}, R²_{H12}~~ and R_{H13} each independently represent a hydrogen atom, an alkyl group, an aryl group, an acyl group, an alkylsulfonyl group or an arylsulfonyl group, in which R_{H3} may alternatively represent a hydroxy group; ~~R_{b100}, R_{b101}, R_{b102}, R_{b130} to R_{b133}~~ each independently represent a hydrogen atom or a substituent; ~~Y₇ and Y₈ each independently represent a substituent other than a hydroxy group; Y₉ represents a substituent; m₅ represents 0 or 1; m₇ represents an integer from 0 to 5; m₈ represents an integer from 1 to 5; and m₉ represents an integer from 0 to 4; Z₁₀~~

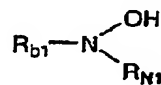
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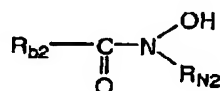
represents a non-metal atomic group capable of forming a ring; and X_{12} represents a hydrogen atom, an alkyl group, an aryl group, a heterocyclic group, an alkoxy group, an amino group or a carbamoyl group; X_6 and X'_6 each independently represent a hydroxy group, an alkoxy group, a mercapto group, an alkylthio group, an amino group, an acylamino group, a sulfonamide group, an alkoxy-carbonylamino group, an ureido group, an acyloxy group, an acylthio group, an alkylaminocarbonyloxy group, or an arylaminocarbonyloxy group; R_{b60} and R_{b61} each independently represent an alkyl group, an aryl group, an amino group, an alkoxy group or an aryloxy group, and R_{b60} and R_{b61} may be mutually bonded to form a cyclic structure.

Formula (I) $A-(W)_n-B$

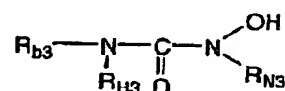
(B₁)



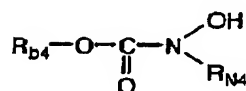
(B₂)



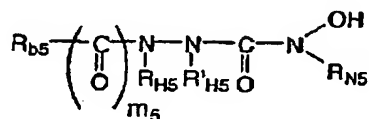
(B₃)



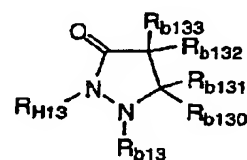
(B₄)



(B₅)



(B₁₃)



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2. (original) The image forming method according to claim 1, wherein the developing time is 2 to 10 seconds.

3. (original) The image forming method according to claim 1, wherein the thermal development is conducted at a temperature of 80 to 250 °C.

4. (original) The image forming method according to claim 1, wherein the thermal development is conducted at a temperature of 100 to 140 °C.

5. (original) The image forming method according to claim 1, wherein the photothermographic material further includes an antifogging agent.

6. (original) The image forming method according to claim 1, wherein the photosensitive silver halide has an average grain size of 5 to 50 nm.

7. (original) The image forming method according to claim 1, wherein the photothermographic material further includes a development accelerator.

8. (original) The image forming method according to claim 1, wherein the photothermographic material further includes a compound represented by the following formula (H):



wherein in formula (H), Q represents an alkyl group, an aryl group or a heterocyclic group; Y represents a divalent connecting group; n represents 0 or 1; Z₁ and Z₂ each independently represent a halogen atom; and X represents a hydrogen atom or an electron attracting group.

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9. (original) The image forming method according to claim 1, wherein the photothermographic material further includes a toning agent.

10. (original) The image forming method according to claim 1, wherein the photothermographic material further includes a ultra-high contrast agent.

11. (original) The image forming method according to claim 1, wherein the photothermographic material further includes a matting agent.

12. (original) The image forming method according to claim 1, wherein the radiation source was a laser.

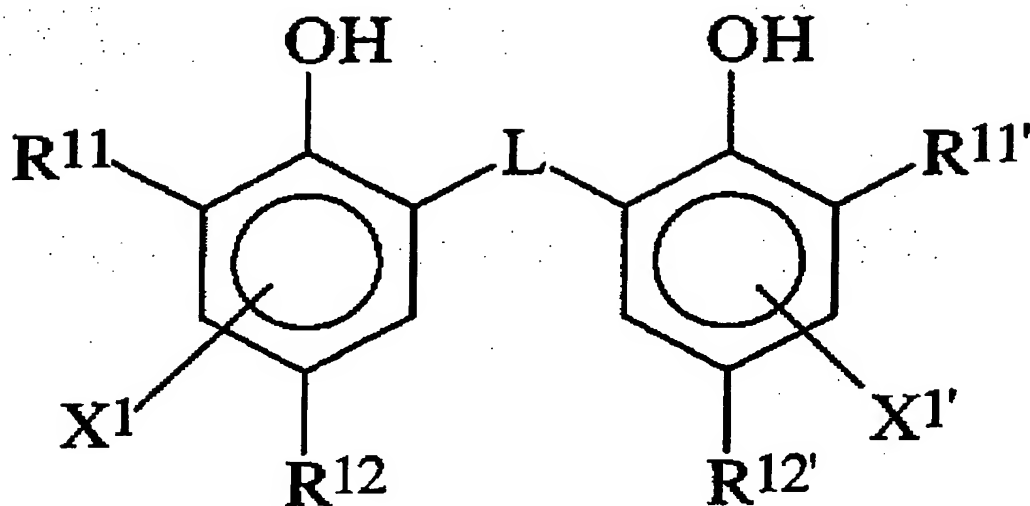
13. (original) The image forming method according to claim 1, wherein the laser has a light emission peak intensity within a wavelength range of 350 to 450 nm.

14. (original) The image forming method according to claim 1, wherein the reducing agent is a compound represented by the following formula (R-1):

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Formula (R-1)



wherein in formula (R-1), R^{11} and $R^{11'}$ each independently represent an alkyl group having 1 to 20 carbon atoms; R^{12} and $R^{12'}$ each independently represent an alkyl group having 2 to 20 carbon atoms; L represents a -S- group or a -CHR¹³- group; R¹³ represents a hydrogen atom or an alkyl group having 1 to 20 carbon atoms; X¹ and X^{1'} each independently represent a hydrogen atom or a group that can substitute a benzene ring.

Claims 15-20 (Cancelled)

21. (previously presented) The method of claim 1 wherein the silver halide has a silver iodide content of 80 to 100 mol%.

22. (previously presented) The method of claim 1 wherein the silver halide has a silver iodide content of 90 to 100 mol%.

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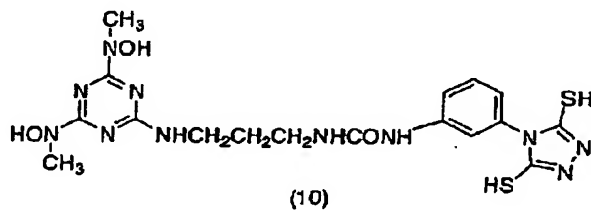
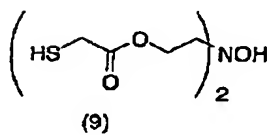
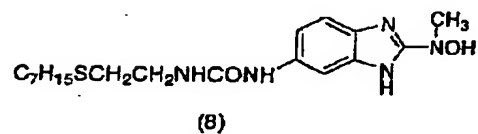
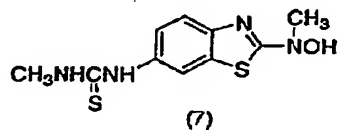
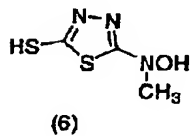
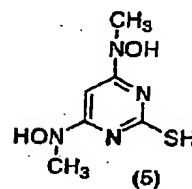
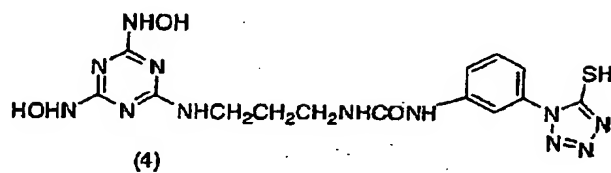
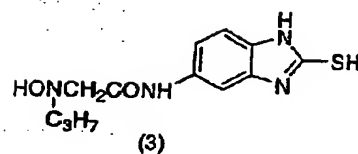
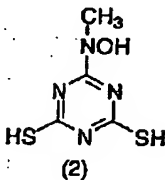
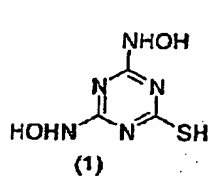
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23. (previously presented) The method of claim 1, wherein an adsorbable group represented by A is a mercapto group, a salt thereof, a thion group ($-C(=S)-$), a heterocyclic group containing at least an atom selected from a nitrogen atom, a sulfur atom, a selenium atom and a tellurium atom, a sulfide group, a disulfide group, a cationic group, or an ethynyl group.

24. (currently amended) The method of claim 1, wherein the adsorbable redox compound is represented by any of the following formulas (1) to (38) and (71) to (81) ~~(96)~~:

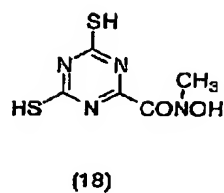
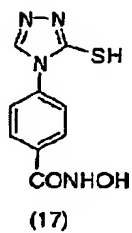
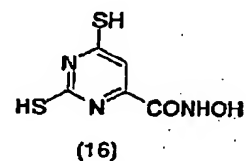
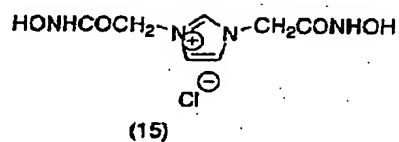
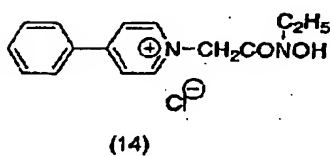
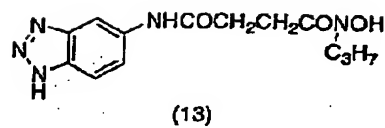
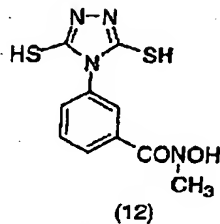
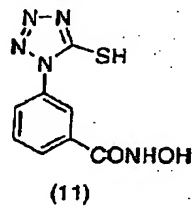
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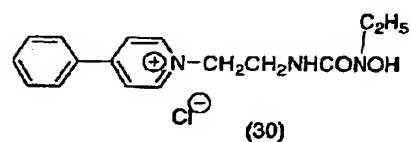
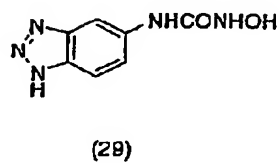
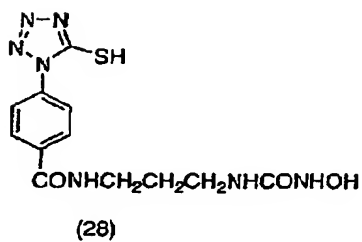
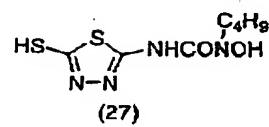
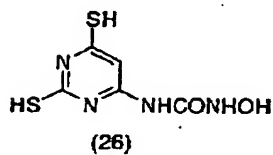
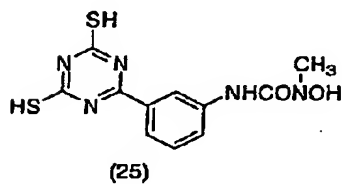
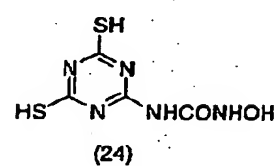
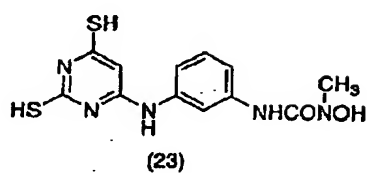
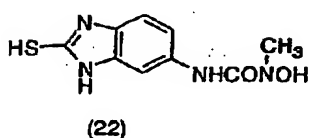
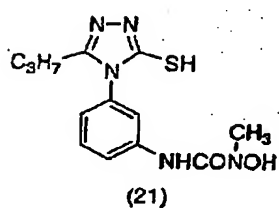
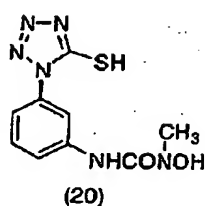
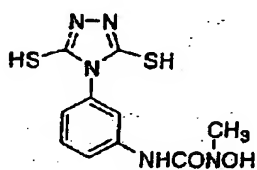
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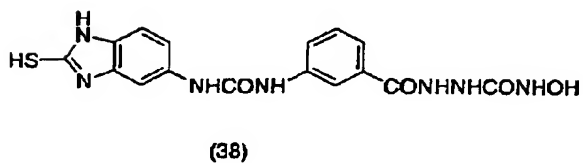
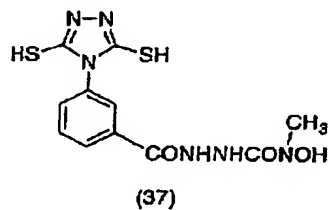
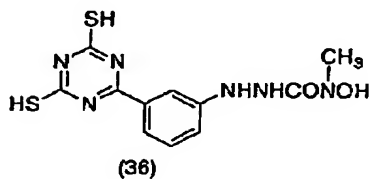
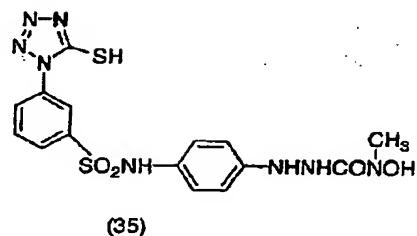
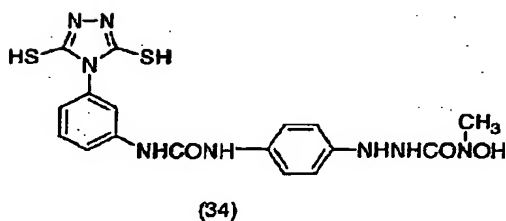
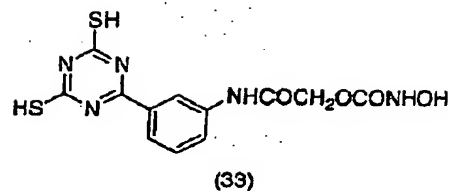
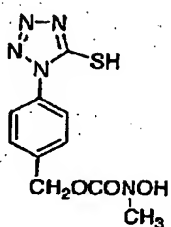
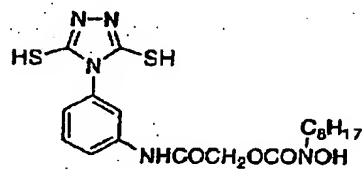
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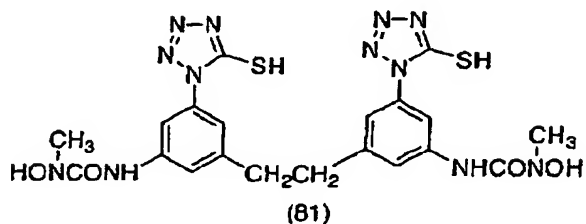
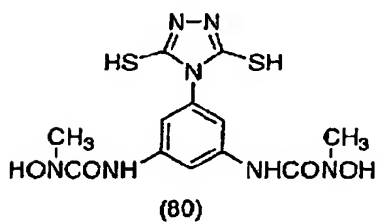
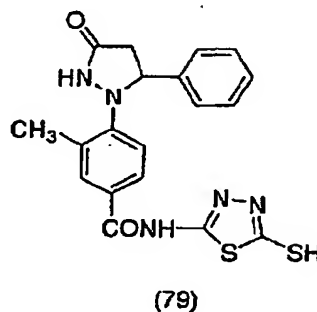
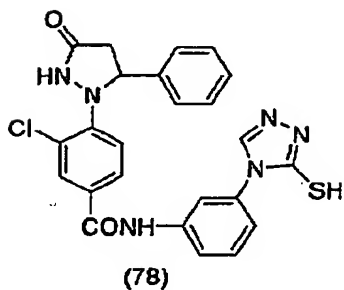
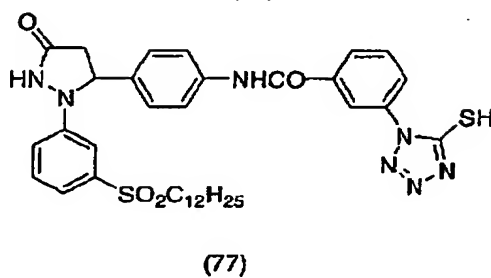
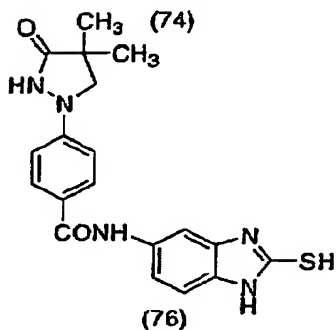
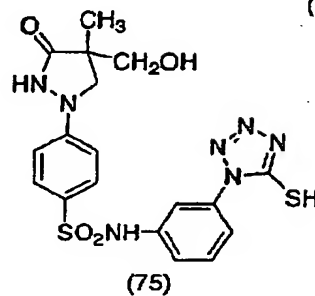
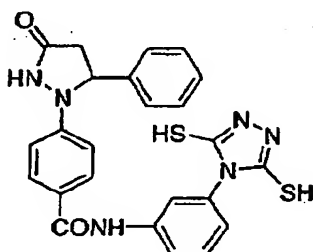
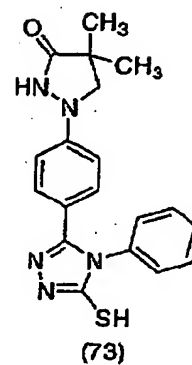
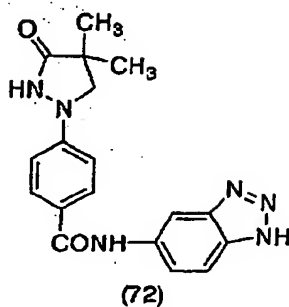
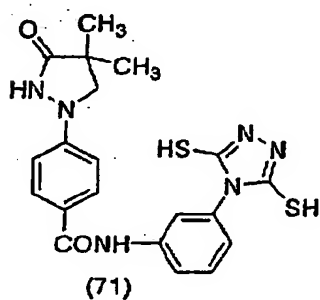
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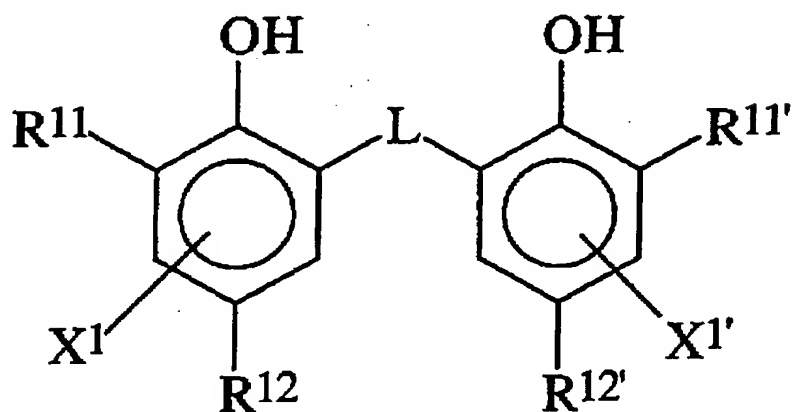


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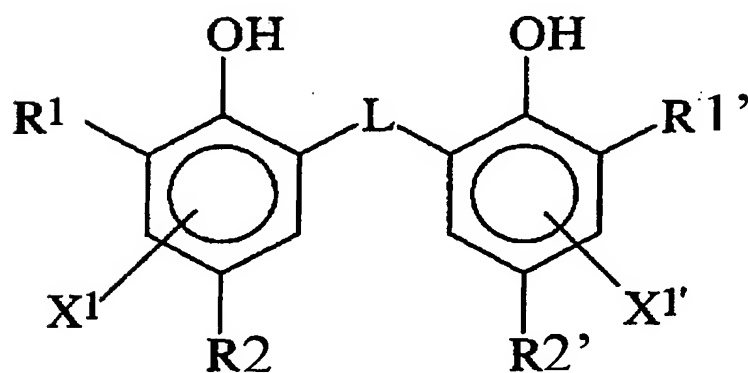
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25. (previously presented) The method of claim 1, wherein the reducing agent is at least one compound selected from the group consisting of Formula (R-1) and Formula (R-2):

Formula (R-1)



Formula (R-2)



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wherein in formula (R-1), R^{11} and $R^{11'}$ each independently represent an alkyl group having 1 to 20 carbon atoms; R^{12} and $R^{12'}$ each independently represent an alkyl group having 2 to 20 carbon atoms; L represents a -S- group or a -CHR¹³- group; R^{13} represents a hydrogen atom or an alkyl group having 1 to 20 carbon atoms; X^1 and $X^{1'}$ each independently represent a hydrogen atom or a group that can substitute a benzene ring; and wherein

in formula (R-2), R^1 and $R^{1'}$ each independently represent an alkyl group having 3 to 20 carbon atoms and including a secondary or tertiary carbon atom bonded to the benzene ring; R^2 and $R^{2'}$ each independently represent a methyl group; L represents -S- or -CHR³-; R^3 represents a hydrogen atom or an alkyl group with 1 to 20 carbon atoms; and X^1 and $X^{1'}$ each independently represent a hydrogen atom or a group that can substitute the benzene ring.

26. (previously presented) The method of claim 1, wherein the photothermographic material further comprises a compound represented by the following formula (H):



wherein in formula (H), X is a bromine atom; Y is SO₂; N is 1; and Q is an aryl group or a heterocyclic group.